



## PATENT ABSTRACTS OF JAPAN

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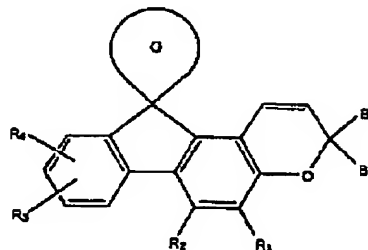
**(54) PHOTOCROMIC SPIROFLUORENOPYRAN AND ITS USE****(57) Abstract:**

**PROBLEM TO BE SOLVED:** To obtain a compound having a desirable lightening effect and being useful for e.g. a lens by selecting a specified photochromic spirofluorenopyrans.

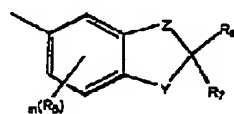
**SOLUTION:** A photochromic spirofluorenopyrans of formula I is selected. In formula I, R<sub>1</sub> is a 1-6C alkyl, a 1-6C alkoxy, phenyl, Br, Cl, or F; R<sub>2</sub> to R<sub>4</sub> are each H or R<sub>1</sub>; G together with the spiro carbon atoms forms a five- to eight-membered ring joined with at least one aromatic or aromatic-heterocyclic ring system in which the ring system is benzene, naphthalene, phenanthrene, pyridine, quinoline, furan, or the like; B and B' are each (a) a (substituted)phenyl or a (substituted)naphthyl, (b) a (substituted)heterocyclic compound, (c) a group of formula II or III, or (d) a (substituted)fluoren-9-ylidene or a saturated hydrocarbon group being a 3-12C spiromonocyclic group, a 7-12C spirobicyclic group, or a 7-12C spirotricyclic group. In formulae II and III, Y and

Z are O, S, CH, CH<sub>2</sub>, or NR; R<sub>5</sub> is R<sub>1</sub> or OH; (m) is 0-2; R<sub>6</sub> and R<sub>7</sub> are each H or a 1-6C alkyl; and R is R<sub>6</sub>, a 1-6C acyl, or phenyl.

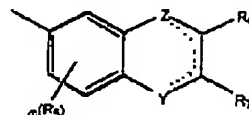
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I



II



III